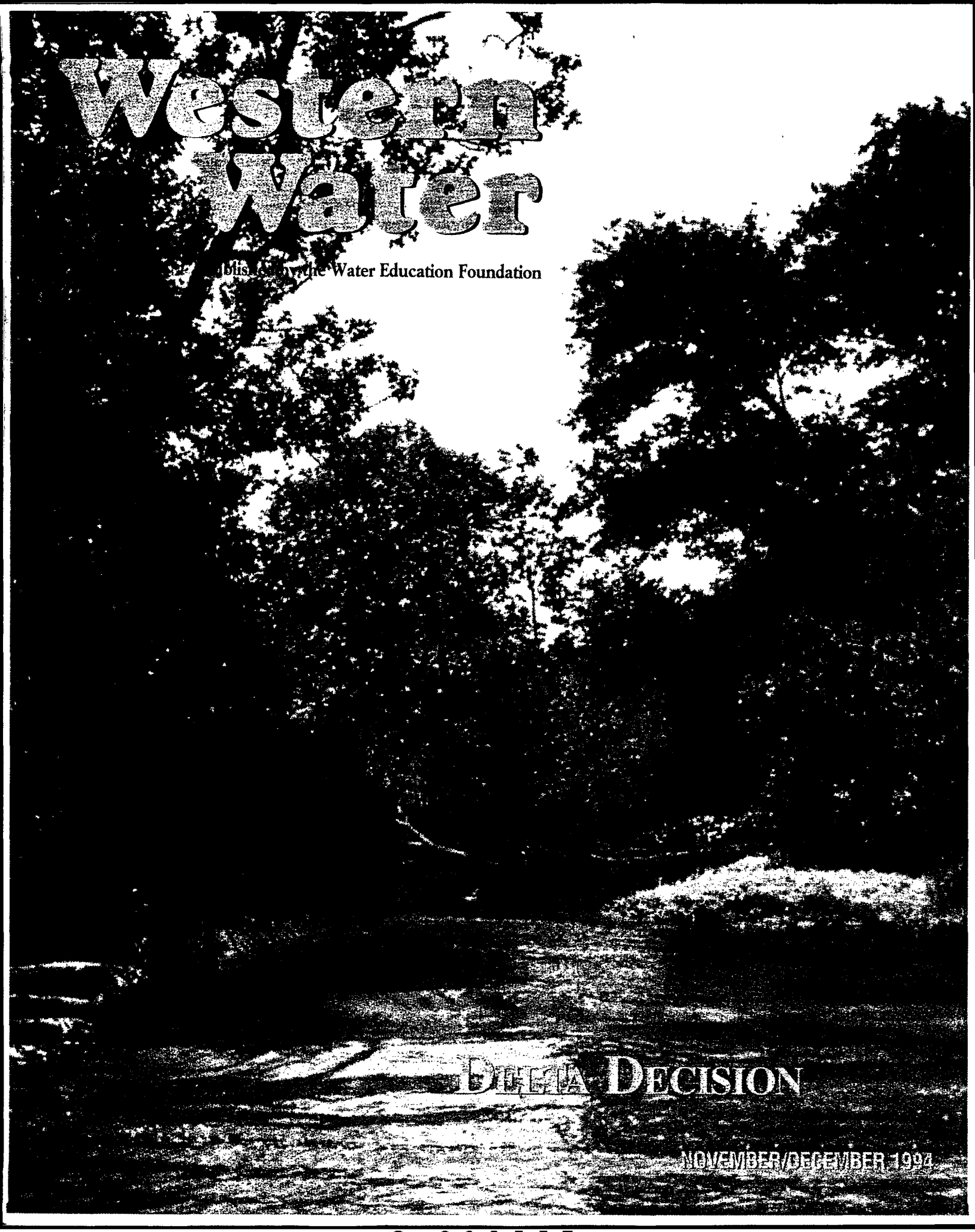

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On the cover

Long the apex of controversy in California water, new Bay-Delta water quality standards may be set as competing interest groups form a fragile accord. Pictured on the cover is a view of the Sacramento River in the Delta.

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The Water Education Foundation would like to thank all the sources and experts who reviewed this magazine for balance and accuracy.

The Water Education Foundation is a nonprofit, impartial, tax-exempt organization. Its mission is to develop and implement educational programs leading to a broader understanding of water issues and to resolution of water problems.

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EDITOR'S DESK

In October I participated on a Washington, D.C., teleconference panel for the U.S. National Committee for World Food Day. The program was televised to more than 5 million people around the world. The program title, *Water: Needs of Farms, Cities and the Environment in Growing Conflict*, tells the story. All over the world there are conflicts over water, but it is particularly shocking in the Third World where we see basic human needs for water not being met. As of 1990, the end of the U.N. Water Decade, half the people in developing countries still had no sanitation facilities and one-third lacked safe drinking water!

To do our part to help, we donated the Foundation's honorarium from the conference to the Peace Corps Water Projects Fund which helps a needy community drill a well or improve irrigation. We'll keep you informed on the project's progress. There are other organizations working in this area, including Water for People in Denver. If you are interested in groups helping to create water self-sufficiency in the Third World, we'll get you in touch with them.

Here in California where conflicting interests have fought for years over water standards for the Bay-Delta, there is hope for an accord. Sue McClurg has followed a series of meetings, studies and negotiations over the last nine months to bring you up-to-date on the latest developments. This issue of *Western Water* is helpful background for the Dec. 15 release of the U.S. EPA's final standards.

We had the opportunity to view our Bay-Delta in comparison with the lowlands of The Netherlands and Chesapeake Bay at a September two-day symposium, **Developing a Vision: A Comparison of Problems and Solutions in the Bay-Delta, The Netherlands and Chesapeake Bay**, sponsored by the Foundation and 13 other organizations. To learn how these areas have met the challenge of ecological change while providing for agricultural and urban concerns was fascinating. We especially enjoyed meeting the Dutch and East Coast folks and hearing their perspectives on our problems. Special thanks to the sponsors and co-sponsors who helped us organize the event. A conference summary will be available from the Foundation by the end of the year.

To educate more Westerners on water, the Foundation has received state and federal grants for public outreach and school programs. These programs will start this winter and run from one to three years. Programs will be carried out in California's Central Valley (non-point pollution public education); in Watsonville, California (ground water overdraft and pollution prevention); throughout California (school curriculum development and teacher training in ground water); and within the Colorado River basin (a Hydroexplorer computer game in which a submarine travels down the Colorado from Wyoming to Mexico).

As you can see we're busy, but not too busy (since this is our last issue of the year) to wish you season's greetings and a happy new year.... Don't forget to order your season's greeting cards and note cards from the Foundation.

Rita Schmidt Sudman

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Happy 15th Anniversary, Rita

The Board of Directors and staff of the Water Education Foundation congratulate Rita Schmidt Sudman on her fifteenth anniversary as executive director of the Foundation. When Rita started at the Foundation, the programs included *Western Water* magazine, the California Water Resources Map, the slideshow and the *Layperson's Guide to Auburn Dam*. One of her first projects as director was coordinating the raffle of a side of beef to support the development of a new California Water Map. One of the raffle prizes was a gourmet dinner prepared by Rita and her husband, John. The Foundation had a budget that year of $77,000.

Over the last 15 years, the Foundation's activities and publications have explored every aspect of California water issues, becoming a respected resource for impartial, balanced and accurate information about Western water issues. During Rita's tenure, the programs and publications have become too many to list in this space. Perhaps her proudest accomplishments include the growth of *Western Water* magazine and the production of the public television documentary *To Quench a Thirst*. The Foundation now has a staff of five and a budget of over $890,000.

We add our thanks to Rita for directing the Foundation with such creativity and skill over the past 15 years, and look forward to many more years of her work.

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Delta Decision

Bolstered by the state-federal agreement, a fragile accord on new standards could replace the Delta dissension

by Sue McClurg

For nearly a decade, agricultural, urban and environmental water interests have fought over new water quality standards for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. The Delta debate has not ended, but stakeholders appear close to a fragile accord on a preferred plan for new standards — the first step in the long-term effort to "fix" the estuary.

For most of the water world it is no longer a question of *if* more fresh water outflow will be required to restore the estuary's environmental resources but *how much* water will be needed, at what times of the year, to meet what water quality standards.

A series of meetings, studies and negotiations over the last nine months has narrowed the gap between water interest groups, and state and federal officials. As this issue of *Western Water* went to press, the state's major urban and agricultural water agencies just had released a joint Bay-Delta proposal. "We have an emerging consensus among agricultural and urban water users and are working hard to broaden that consensus," said Greg Gartrell, principal engineer at Contra Costa Water District.

Bolstered by the state-federal framework agreement to jointly resolve short- and long-term Bay-Delta estuary issues and a north-south business alliance to "end the gridlock," there is some optimism that the familiar Delta dissension over new standards might give way to a Delta decision.

With U.S. Environmental Protection Agency (EPA) officials facing a Dec. 15 deadline to adopt final standards and a State Water Resources Control Board (State Board) draft due in December, water interest groups, biologists and state and federal employees were meeting almost daily in an intense effort to hammer-out final differences of opinion.

"We had hoped to arrive here today with a consensus package; unfortunately, we're not quite there yet," Patrick Wright, Bay-Delta program manager for EPA Region 9 said at the State Board's last workshop in October. "But I do think we will come to an agreement on mutually acceptable standards that meet our requirements."

"The single most encouraging development this year has been the high degree of agreement over the salinity standard."

— Gary Bobker, Bay Institute

State Board Executive Officer Walter Pettit agreed. "The objective of the staff workshops was to facilitate a consensus and bring back a preferred alternative," he told board members. "The bad news is there is no preferred alternative. The good news is a lot of progress has been made."

While water managers appear ready to accept new water quality standards that will increase fresh water Delta outflow, their support hinges on implementation of a broader estuary management program *in addition to* increasing outflow. Overall, they want the State Board to design its new water quality standards to fit with future comprehensive efforts to improve the estuary. Components of such a plan would incorporate multiple species management to replace current species-by-species requirements, affirm state-federal cooperative efforts to reach a long-term Delta solution, and address other factors contributing to the decline of the estuary's fish and wildlife (see page 9).

"The stars are pretty well lined-up for some level of agreement on new standards, but there is one last big remaining issue to resolve — the Endangered Species Act," said Lyle Hoag, executive director of California Urban Water Agencies (CUWA).

Water interests want to ensure the new standards have "shelf life" when it comes to possible future ESA mandates. They point to the new "a deal is a deal" policy outlined in August by Secretary of the Interior Bruce Babbitt. Under this "no surprises" strategy, landowners with endangered species on their property who agree to a habitat conservation plan will not be subject to a later demand for more land or greater financial commitment if the plan is adhered to — even if the species' needs change over time or a new plant or animal is granted ESA protection.

Federal officials have confirmed that the new policy also applies to aquatic systems, but it is unclear how much flexibility the stringent protection measures mandated by the ESA really will allow — particularly in a water

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setting. "We would be pretty conservative with our required protection measures if we entered into a 'deal's a deal' where we might be willing to take more risk if we could revisit and modify protection measures," said Jim Lecky, chief of the endangered species program for the National Marine Fisheries Service (NMFS). "That's the downside of the 'deal' approach, although we are trying to move in a direction that does provide some certainty."

Led by CUWA, urban water purveyors have worked to forge mutually acceptable standards that will resolve the Delta's environmental problems *and* enhance water supply certainty. Realizing that a Delta solution is needed if their members are to continue to farm with certainty, westside San Joaquin Valley agricultural water agencies, including Westlands Water District and Kern County Water Agency, joined with urban water interests to generate an alternative Bay-Delta proposal.

"Development of a consensus was one of the highest priorities for all the agencies involved," said Steve Ottemoeller, chief of water resources for Westlands Water District, adding that urban and agricultural leaders "sweated blood" over their recent proposal. "I strongly support this process and think what we've come up with as a group is a very balanced proposal."

Although today's spirit of cooperation could fade before final water quality standards are adopted, its development is a milestone in the long-running effort to set new Bay-Delta standards. "The single most encouraging development this year has been the high degree of agreement over the salinity standard," said Gary Bobker of the Bay Institute of San Francisco. "There was a lot of exchange of views between environmental and agricultural and urban water groups, but now we're not exploring the same ground as much and there are some major issues outstanding."

How to protect the estuary remains one of the largest unresolved issues. A modified form of the EPA-proposed maximum 2 parts-per-thousand salinity standard for three different Delta locations — Roe Island, Chipps Island and the confluence of the Sacramento-San Joaquin rivers — is included in the urban-agricultural joint proposal. The plan also outlines project operation and flow requirements, management of non-flow issues and innovative implementation measures. There are, however, several unresolved issues. While some are minor issues, others offer more significant areas of disagreement, and it is not clear what will happen if the parties are unable to come to agreement.

Water users appear ready to accept increases in fresh water Delta outflow, but their support hinges on implementation of a broader estuary management program.

Whatever form the ultimate standards take, the California-Washington, D.C., agreement in which six federal and six state agencies vowed to work together provides for the federal Central Valley Project (CVP) and the State Water Project (SWP) to alter operations to meet EPA water quality standards beginning in January. Under terms of the framework agreement, the State Board's new Bay-Delta standards would be finalized by March 1995 and submitted to EPA for approval. Once new state standards are approved by EPA, the federal agency will withdraw its standards. In July 1995, the State Board is scheduled to initiate a proceeding to allocate legal responsibility to meet the new California Delta water quality standards.

Whether compliance with the new water quality standards would reduce upstream and in-Delta diversions by individuals and water districts is an issue expected to be debated during the water rights portion of the State Board process.

Water users dependent upon the SWP and CVP want other diverters and projects to contribute to Delta outflow or somehow modify operations to enhance the estuary. To date, upstream water districts on both the San Joaquin and Sacramento rivers and individual riparian diverters maintain that it is the responsibility of the SWP and CVP, which have the most junior water rights and are subject to areas of origin statutes, to resolve Delta problems.

This issue of *Western Water* provides an overview of the ongoing effort to forge mutually acceptable standards and develop a comprehensive plan to address other Delta issues. It also updates the state-federal partnership to determine a long-term solution to "fix" the Bay-Delta estuary. For more background on Delta issues, please refer to the *Layperson's Guide to the Delta* and back issues of *Western Water*, January/February 1992 and March/April 1993.

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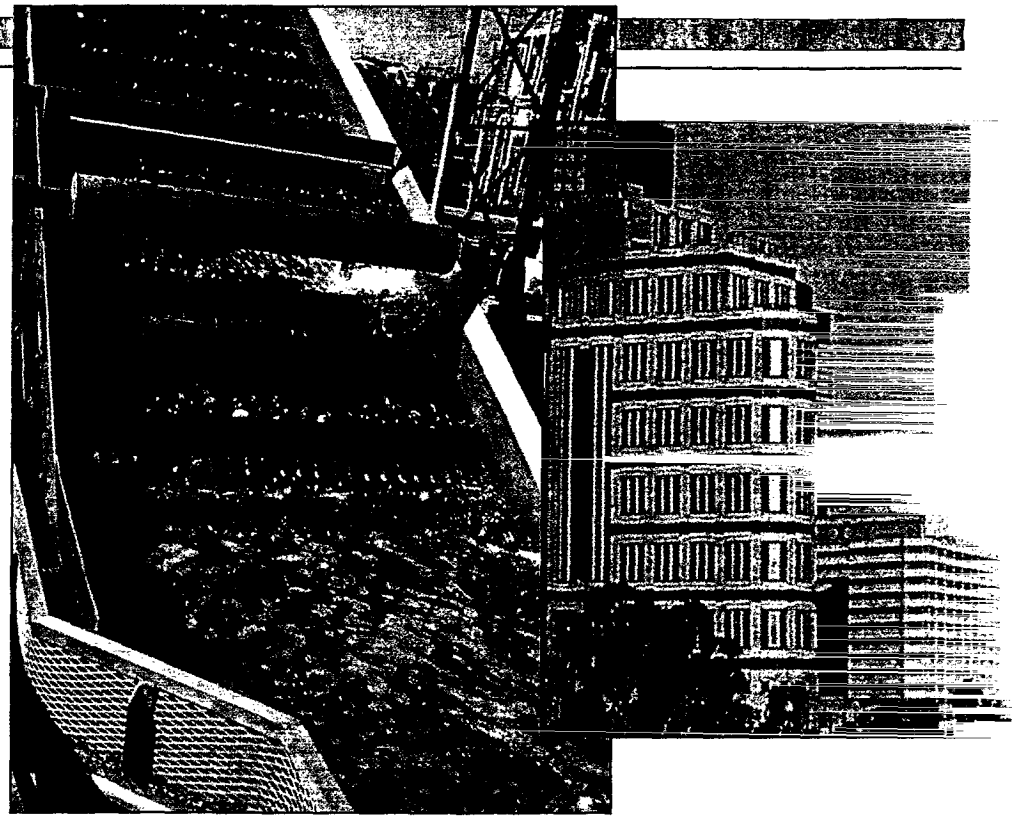

Background

In 1987, EPA officials notified the State Board that the water quality standards it had adopted in 1978 were inadequate to protect the estuary. Because the State Board was about to begin a series of public hearings (the Bay-Delta Proceedings) to determine modifications to Water Right Decision 1485 (D-1485) and the Delta Water Quality Control Plan, EPA did not impose its own standards at that time.

During the lengthy Bay-Delta hearing process, the State Board heard testimony from more than 150 water interest organizations and state and federal agencies. Board members also weighed the effect of a 1986 landmark legal ruling, the "Racanelli Decision," which clarified their obligations and authority. The appellate court ruling, in response to 14 lawsuits filed against D-1485, directed the State Board to balance and protect all beneficial uses of Bay-Delta waters — including fishery and other instream uses — and to modify existing water rights, if necessary, to achieve that balance.

In late 1988, the State Board issued a draft Delta plan, which included water quality and flow objectives. The document generated a great deal of controversy and subsequently was withdrawn. The State Board then announced it would begin anew, with the ensuing order to come in two separate actions: a water quality plan that only would address issues such as salinity, temperature and dissolved oxygen; and a water rights decision that would implement the water quality objectives, and impose flow standards and project operations criteria.

In 1991, the State Board adopted a Delta salinity plan — parts of which were rejected by EPA — and began work on a separate water rights decision. With a final decision three years away and an ever-growing threat of federally imposed water quality rules, Gov. Wilson intervened. In his 1992 water policy, the governor asked the State Board to set interim standards. He also announced formation of a citizens' group (the Bay-Delta Oversight Council or BDOC) comprised of leading urban, agricultural and environmental water players to recommend long-term solutions to Delta environmental and plumbing problems.

The State Board released a set of draft interim standards, Decision 1630 (D-1630), in December 1992. Designed primarily to stop further deterioration of the estuary's environmental resources, D-1630 received general support from urban and environmental interests, but was opposed by agricultural groups. After weeks of hearings and citing increasing endangered species Delta requirements, Wilson requested in April 1993 that the State Board discontinue work on D-1630 and return to drafting long-term water quality standards.

After the State Board dropped D-1630, EPA officials proceeded to develop the Bay-Delta standards they had promised to promulgate under authority of the federal Clean Water Act. Under terms of an April 1993 court settlement with the Sierra Club Legal Defense Fund and 18 other environmental groups, EPA released its draft set of water quality standards in December 1993. The federal agency must now adopt its final Bay-Delta standards by Dec. 15.

Plans and Proposals

Through extensive modifications, EPA officials have reduced the water supply impacts of their original draft standards by about one-third in the most-critical water years — from about 1.6 million acre-feet to 1.1 million acre-feet. The new urban-agricultural alternative, according to that partnership's own analysis, would have a water supply impact of about 1 million acre-feet in that same period.

"The differences truly are a matter of degree rather than fundamental differences of protection for the estuary," said EPA's Wright. "And I remain optimistic; we have a process in place that we think can lead to mutually acceptable standards."

In its draft plan, EPA called for the 2 parts-per-thousand salinity standard to be met based on five water-year classifications. Currently, it favors incorporation of a sliding scale depending upon current conditions with three alternative methods of compliance at each monitoring location — daily salinity, 14-day average salinity, or equivalent daily outflow. The new urban-agricultural plan calls for the same standard with an additional adjust-

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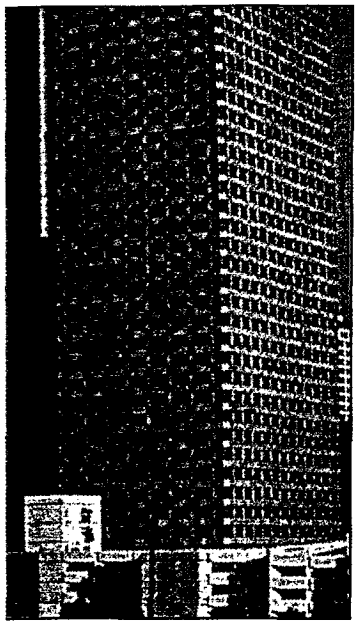

Agricultural and urban water interests are working together to generate an alternate Bay-Delta proposal that meets their criteria, and is acceptable to environmental interests and EPA.

ment for the month of February. In critical and dry years, the water-user alternative would require salinity compliance only at the confluence of the Sacramento and San Joaquin rivers, increasing the amount of water available for export over the amount under the EPA plan.

In the past six months, the State Board referred nine alternative standards packages to the Department of Water Resources (DWR) for computer analyses of the additional annual water supply impacts over D-1485. In an average year, according to DWR, estimated additional water supply impacts under most plans would range from a low of about 200,000 acre-feet to 1 million acre-feet. (One alternative would have a water supply impact of 3 million acre-feet in an average year, but it is not widely supported.) During a critically dry period, DWR's analyses showed additional annual water supply impacts of about 800,000 acre-feet to a high of 2.5 million acre-feet.

Whatever water quality standards ultimately are put in place, water project operation under these rules is only one piece of the puzzle. Take limits of individual endangered species imposed by the ESA is the other. It is not clear whether the federal-state framework agreement on Delta standards will work within the confines of the ESA. "The ESA is the wild card and its 'take limit' clause is a further wild card. You can't model take limits," said Bob Potter, chief deputy director at DWR.

NMFS officials are now consulting with DWR and the U.S. Bureau of Reclamation (Bureau) to revise the complex and controversial winter-run take limits in the current biological opinion. "The ESA provides for the development of a 'reasonable, prudent alternative' to allow for the continued operation of the water projects so they do not pose any jeopardy to the [continued existence of the] species," Lecky said. "And any reasonable take is authorized as incidental take. If you draft the protection measures right, take limits shouldn't be a controlling factor. We're revisiting the biological opinion for the winter-run to try and add more certainty for fish protection and the water projects."

The U.S. Fish and Wildlife Service (USFWS) is working on a similar modified biological opinion for the Delta smelt that would allow for more water project certainty while protecting the smelt.

However, these species-protection measures will increase the annual water supply impacts no matter which new water quality standards ultimately are adopted. At the State Board's Oct. 19 workshop, federal officials said they also want to ensure whatever Delta water is needed for the CVP-required doubling anadromous fish program will be included in these standards. The amount of water federal biologists believe necessary to provide sufficient endangered species' protections and fulfill portions of the fish plan had not been finalized as this issue of *Western Water* went to press. Nor was it known what effect these additional water requirements would have on the emerging urban-agricultural agreement.

In addition to ensuring that new water quality standards protect the ESA-listed winter-run salmon and Delta smelt, some people favor including protective measures for the spring-run chinook salmon (which could be petitioned for ESA protection).

Lecky, however, cautions that such requirements should be viewed as a way to make life easier under the ESA if the spring-run is listed; not as a means to preclude declaring this salmon stock endangered.

What measures would best protect the estuary's fish populations also are a matter of some debate. Some proposals before the State Board would require "pulse flows," short-term flow increases on the Sacramento and San Joaquin rivers, to aid fish migration. Others would monitor and limit "reverse flows" to reduce fish mortality at the CVP and SWP pumping plants. Most of the plans would include scheduled closures of the Delta Cross Channel to protect Sacramento Valley juvenile chinook salmon on their downstream journey to the sea. (The biological opinion for the endangered winter-run salmon now in effect requires periodic Delta Cross Channel closure and reverse flow limitation measures.)

> ***"The ESA is the wild card and its 'take limit' clause is a further wild card. You can't model take limits."***
>
> **— Bob Potter, DWR**

"We need to put a little more water in the system than under the current favored standards to see improvements," the Bay Institute's Bobker told the State Board. "One million or 1.1 million acre-feet is not necessarily the magic panacea number. These blocks of water aren't going to solve every single problem and if you want certainty, I think you'll have to consider stronger protective measures than what are in these consensus proposals."

No matter what standards ultimately are adopted, fresh water outflow into San Francisco Bay will increase. This, in turn, will reduce the amount of water available

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for other uses — especially if only the CVP and SWP are required to meet the standards. CVP contractors, however, maintain they "gave at the office" through passage of the CVP Improvement Act. The controversial 1992 federal law annually allocates 800,000 acre-feet (600,000 acre-feet in a dry year) of water to the environment. How much of this water will be dedicated to meeting new Bay-Delta water quality standards, ESA requirements or a separate program to double anadromous fish populations remains a major, unresolved issue.

> ***"If you draft the protection measures right, take limits shouldn't be a controlling factor."***
>
> **— Jim Lecky, NMFS**

Water supply impacts on the CVP and SWP to meet a new Delta water quality standard might be lessened if an "environmental water bank," similar to the successful state Drought Water Bank, were created. The urban-agricultural plan favors a "water supply impact cap" beyond which compliance with new Delta standards would be achieved with water purchased through a fund financed by Bay-Delta watershed users and others. Fund monies would be used (1) to acquire water from willing sellers in the Sacramento and San Joaquin watersheds when water supplies beyond the cap were needed to meet outflow requirements or (2) to pay export users to reduce their deliveries.

A mitigation fund or bank to meet environmental water needs also is favored by the Natural Heritage Institute because it would allow "significant improvements in environmental protection with a minimum of economic dislocation to California's water users."

When EPA officials released their draft Bay-Delta proposal last December, they said if all water users were to contribute water toward meeting the standards, water costs to the CVP and SWP would be reduced by half. However, authority over California water rights rests with the State Board and it is not clear how much can be accomplished to share the obligation.

"The upstream diverters and the holders of old water rights — in the Sacramento Valley and on the east side of the San Joaquin Valley — are continuing to say: 'We're not responsible for Delta problems and we'll fight any taking of our water rights,'" said CUWA Executive Director Hoag.

Water rights could become an issue, said Richard Golb, executive director of the Northern California Water Association, which represents Sacramento Valley landowners and irrigation districts. "The environmental problems in the estuary are not limited to the Bay-Delta, they are Central Valley-wide," Golb said. "As upstream water users with senior water rights, we believe that as long as everyone accepts responsibility for these environmental problems and respects California's water law, the water rights phase should proceed without controversy."

Bay-Delta Modeling Forum

Among biologists, there is some disagreement over the effectiveness of pulse flows to aid fish migration and whether the widely used — but largely untested — theory of reverse flows in the western Delta is a primary cause of fish declines at the pumps. (Restrictions on reverse flows are included in the biological opinion to protect the endangered winter-run.)

Computer analyses of various water quality and fish protection proposals often offer conflicting results of how much water it will require to meet that standard.

While some disagreements may be sparked by politics — which agency employs the biologist or engineer — most are instances of scientific uncertainty over the calculated effectiveness of any operational change. Policy-makers' struggle to understand this "inexact" science led to formation of the Bay-Delta Modeling Forum in March 1994.

"One goal of the forum is to resolve technical disputes outside hearing rooms, and to help ensure that policy-makers have a better understanding of the meaning of technical analyses," said Greg Gartrell, principal engineer at Contra Costa Water District and convener of the forum. "Policy-makers should not have to do the peer review themselves."

The forum is a non-partisan membership organization of hydrologists, biologists, economists and others with expertise in modeling. Ultimately, the group would like to develop a peer review process in which biologists, engineers and technical experts from other states would conduct an independent review of specific models, analytic tools and data analyses.

For now, the forum is conducting regular meetings to discuss technical aspects of water. It held one session on the 2-parts-per-thousand salinity standard and plans another for November. It also hopes to increase communication between scientists and policy-makers on technical issues now discussed primarily in adversarial settings.

"Science and engineering treat the uncertainty of a model differently than policy-makers," said Jeff Lefkoff, a principal in Hydrologic Consultants Inc. and vice-convener of the forum. "Our goal is to present modeling information to decision-makers in a way that clarifies the strengths and limitations of model analyses."

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Ecosystem Management

An ecosystem is defined as a landscape that supports a variety of natural communities. The Bay-Delta estuary is an ecosystem, and there is increasing support for a management plan that would oversee all the Bay-Delta's resources in a comprehensive manner rather than the current issue-by-issue, agency-by-agency approach.

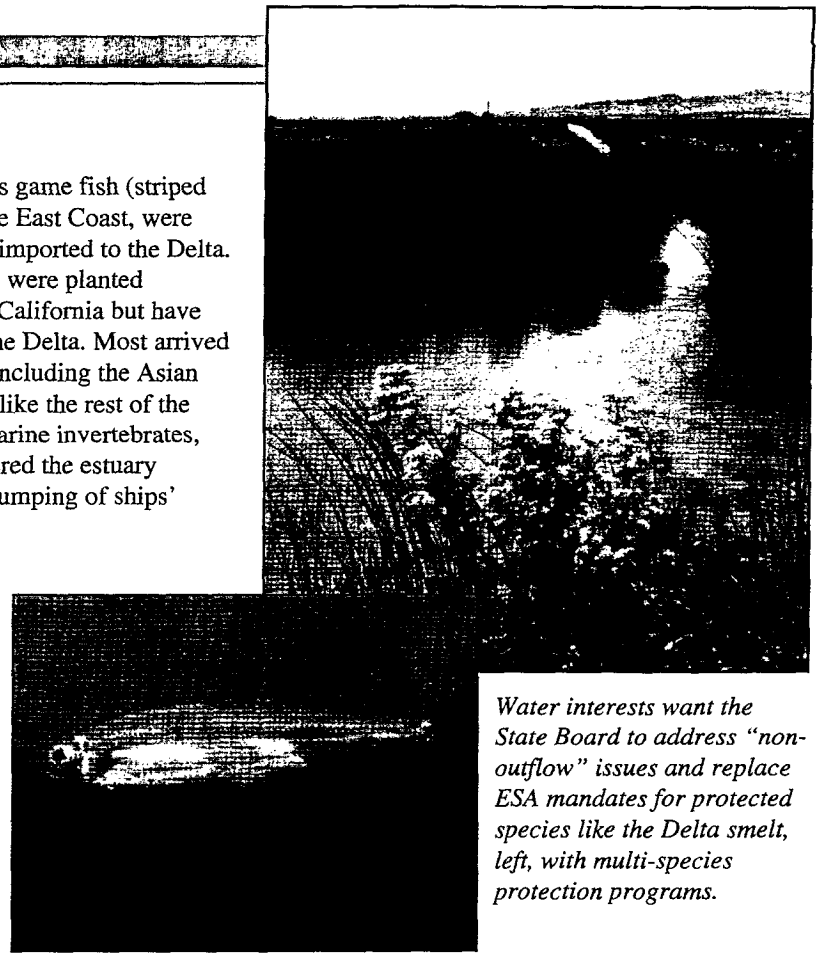
"The Bay-Delta has to be treated as a single ecosystem if we're ever going to find any solutions," said Barry Nelson, executive director of Save San Francisco Bay Association. "The lessons on policy from the last 100 years make that clear."

Ecosystem management of the Bay-Delta is favored by CUWA, the Association of California Water Agencies (ACWA) and other groups who want the State Board to include elements of such a system in its new water quality standards. "It is the view of a significant segment of the water community that [a comprehensive program] ... is essential to providing a long-term, stable Bay-Delta environment for endangered and other species, as well as a reliable supply of water for water users," ACWA Executive Director Steve Hall said in a written statement.

Water interests want the State Board to address a host of "non-outflow" issues upstream of the Delta, in the Bay-Delta estuary and in the ocean through a broader management plan. Many of their proposals echo those contained in the 1993 Comprehensive Conservation and Management Plan (CCMP) formulated by EPA's San Francisco Estuary Project. The plan is now in its implementation stage after gaining approval from Gov. Wilson and EPA Administrator Carol Browner, and some believe accelerated implementation and funding of the CCMP could address many of the estuary issues outlined by ACWA and CUWA. Among issues of concern:

Introduced species — The Bay-Delta estuary is home to more than 150 non-native species of plants and wildlife. Some, such as game fish (striped bass) from the East Coast, were intentionally imported to the Delta. Other species were planted elsewhere in California but have moved into the Delta. Most arrived by accident, including the Asian clam, which, like the rest of the non-native marine invertebrates, probably entered the estuary through the dumping of ships' ballast water.

"Introduced species have had a major impact on the Bay," said marine biologist Andrew Cohen, whose 1993 magazine article "Place Invaders" sparked substantial interest in the topic. "In some cases, the impacts are just about as serious as having a species go extinct — and no one has really paid much attention to them in the past."



Water interests want the State Board to address "non-outflow" issues and replace ESA mandates for protected species like the Delta smelt, left, with multi-species protection programs.

Some introduced plants and animals have lived in the estuary for so long they are considered "native" species by many. The striped bass, for example, was long regarded as the indicator species to measure the environmental health of the multi-use Bay-Delta system. The non-native species do compete with native flora and fauna for space and food, but only in a few cases are the data available to document a direct cause-and-effect relationship between the presence of a non-native species and the demise of native species. Some believe the Asian clam altered the estuary's food chain and precipitated the decline of some fish species, including the Delta smelt.

With the exception of a few state-funded efforts to eradicate some introduced aquatic and terrestrial plants, and the northern pike from Frenchman Reservoir and the white bass from Kaweah River Reservoir, little is being done to rid the Bay-Delta watershed of non-native species. In most cases, not much can be done to eradicate introduced species without affecting native species. Cohen, however, said there are a few plants that could be eradicated now before they spread. He also favors more focus on prevention through better regulation of ship ballast water discharges; inspection of trailered boats at state boundaries for undesirable exotic species; and restrictions on some live bait.

Pollution prevention — Control over the discharge of waste in the state's water is under the jurisdiction of the State Board and Regional Water Quality Control Boards. In general, CUWA wants the State Board to review and assess the implementation of current pollutant and water quality regulatory plans, establish other plans where necessary, develop incentive programs to increase pollution control, support scientific research, and review and update its non-point source pollution management plan.

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Unscreened diversions — There are an estimated 300 unscreened diversions on the Sacramento River and another 1,800 in the Delta. According to CUWA, studies have shown some of these diversions, which divert an estimated 3.2 million acre-feet annually, entrain fish. California law currently requires screens on all new diversions and CUWA wants the State Board to use its "authority to correct unreasonable methods of diversion" to expand screen requirements.

In the multi-year, seven-step proposal outlined by CUWA, the State Board would establish a priority list for screens on diversions believed to cause the most damage; set criteria for appropriate screens; and grant diverters screen waivers if scientific and engineering evidence warranted. For those diversions that warranted screening, the State Board would then develop compliance criteria for each diverter and require installation of a screen.

Legal and illegal fishing — As salmon stocks and other fish continue to decline in numbers, CUWA wants the state and federal agencies with control over sport and commercial fishing to:

— Review and modify, if necessary, existing harvest regulations to ensure they offer adequate protection with either an annual or bi-annual review.

— Negotiate a memorandum of understanding with the commercial fishing industry to develop fishing methods that would reduce the incidental take of non-target species, such as trawling methods for shrimp that result in incidental take of striped bass and other fish.

CUWA also wants the state to make a firm commitment to extend and expand the Delta poaching controls established in 1992 by DWR and the state Department of Fish and Game. DFG estimates that anglers illegally take several hundred thousand undersized striped bass annually and the three-year program's aim is to decrease undersized takings by 20 percent.

Although there is increasing support among water users for an ecosystem management program, Engineering Consultant B.J. Miller is not certain it will yield the results they desire. "I'm afraid some people believe ecosystem management is a new solution that won't involve reallocation or other difficult issues," he said.

Other non-flow issues identified in the new urban-agricultural joint Bay-Delta proposal include land-derived salts, restoration of riparian, wetland and estuarine habitats and control of Delta channel alterations and local land-use modifications.

In the plan, the agencies said they view the "state-federal Bay-Delta Ecosystem Partnership as the primary process for developing this comprehensive plan and ensuring consistency with applicable state and federal environmental laws, policies and regulations."

Other Estuaries

California is not alone in searching for new and better ways to manage its multi-use estuary. Nor is it unusual that a crisis is required before conflict begins to give way to compromise. These were among the messages delivered in September by representatives from The Netherlands and Chesapeake Bay at *Developing a Vision: A Comparison of Problems and Solutions in the Bay-Delta, The Netherlands and Chesapeake Bay*, a recent symposium in Sacramento.

Left to right, Dutch speakers Peter Nijhoff and Dr. A.N. van der Zande with WEF President Bob Hagan.

The Netherlands Nature Policy Plan, developed over the last 15 years, seeks to restore approximately 600,000 acres of reclaimed farmland to wetlands and wildlife habitat, reconciling the legitimate demands of private property owners with the ecological needs of The Netherlands' land and waterways.

The Chesapeake Bay project began as an effort to improve water quality for fisheries and oyster beds but quickly expanded its scope to include regional land use planning and watershed protection.

Pollution, a decline of plants and animals, and multi-agency management conflicts were similar problems among the three estuaries. The most significant difference between the Bay-Delta, and The Netherlands and Chesapeake Bay is the fact that more citizens and public officials overseas and on the East Coast identified with their ecosystem, regardless of political orientation; there was greater urgency to solve the problems and involvement at the highest levels of government. And unlike the Bay-Delta, water allocation was not as big an issue. Still, lessons learned in these other programs and shared at the conference could prove invaluable.

Mike Haire, director of Maryland's Chesapeake Bay Program offered this advice:

— Start with good, basic science, but don't wait for perfect information;

— Establish quantitative goals and dates of attainment and track them;

— Involve government and citizens at the beginning;

— Have good costs estimates. Be flexible for sources of money;

— Involve political leaders at the highest level and keep them totally engaged.

The key to success for The Netherlands' plan, said Deputy Director A.N. van der Zande, was an integrated approach by government and a national goal to promote restoration.

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Search for Consensus Continues

From the three-way water agreement process to BDOC to the new state-federal Bay-Delta Ecosystem Partnership, the search for Delta consensus — and a long-term solution — continues. "I'm fairly optimistic for the potential for consensus," said Dan Nelson, executive director of the San Luis and Delta-Mendota Water Authority, which represents CVP contractors in the western San Joaquin Valley and San Benito and Santa Clara counties. "The framework agreement was a minor miracle."

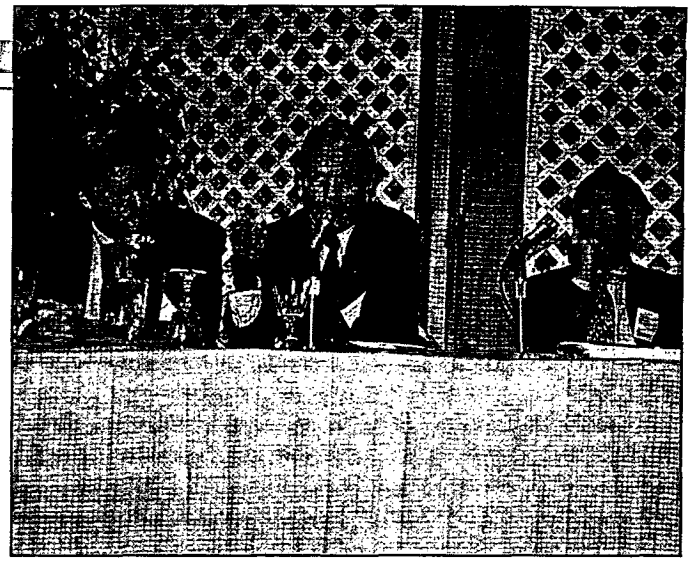
Forged after months of negotiations, the state-federal framework agreement established a three-step Bay-Delta program: short-term CVP and SWP operation to meet federal water quality standards; adoption of mutually acceptable state water quality standards; and development of a long-term strategy to resolve fish and wildlife, water supply reliability and water quality problems.

With an accord close on new Delta water quality standards, increasing attention is being focused on the long-term Bay-Delta issues and solution. Many hope a resolution can be reached through the new California-Washington, D.C., strategy that will provide leadership from top-level state and federal officials and participation by all stakeholders.

Key to the success of any consensus-based resolution to Bay-Delta issues, however, is to ensure all interest groups remain at the negotiations table. After Wilson asked the State Board to stop work on D-1630 in 1993, several environmental representatives resigned from BDOC. The council has continued to meet and the agency's staff has collected and assembled material on a number of technical issues, but widespread support from all sectors of the water world is needed for endorsement of whatever long-term solution is chosen.

"Without environmentalist participation, we lack the political will to move forward," said Mary-Ann Warmerdam, director of natural resources for the California Farm Bureau Federation. "It's difficult for public policy-makers to go forward if they don't feel they have a broad underpinning of support."

Beyond a new advisory committee, Tom Graff, senior attorney for the Environmental Defense Fund, said active participation by the top political players is essential. "For many who are involved, the one and only goal of this joint process is to get a Peripheral Canal authorized," he said. "The only way to have that happen — and this is not an option I'm endorsing — is to have the serious involvement of the governor of the state and of the secretary of the Interior, or even the president, at the federal level."



From left to right, Barry Nelson, Save San Francisco Bay; Bob Potter, DWR; and B.J. Miller, consultant, at the September Developing a Vision *conference organized by WEF.*

"At some point, someone at the executive level is going to have to bite the bullet."

— Mary-Ann Warmerdam
California Farm Bureau

Although many would argue that the Peripheral Canal is not the foregone long-term solution, everyone believes full participation by both governments is essential. Under the Bay-Delta Ecosystem Partnership, the governor and Interior Secretary Babbitt will be the lead decision-makers for California and Washington, D.C. The newly formed CAL-FED (the California Water Policy Council and the Federal Ecosystem Directorate) will report to them, and oversee implementation of the framework agreement with advice from an advisory committee of major water and environmental interests.

Keeping the members of that advisory committee working toward a consensus would be central to the ultimate success of reaching a conclusion. "It's difficult for the interests to compromise when they've fought for decades," said Barry Nelson. "There has to be something driving the consensus — no one is ever going to be willing to compromise if there isn't some sort of a political force pushing for consensus."

At the Sept. 13-14 *Developing a Vision: A Comparison of Problems and Solutions in the Bay-Delta, The Netherlands and Chesapeake Bay* symposium in Sacramento, spokespeople within the water interest groups cited a number of means for ensuring a push for consensus and a solution: fear; self-interest; a sense of potential loss; a legislative mandate; or a court-ordered decision.

"I find it a little ironic because the ESA may be what will ultimately bring people together," said Zeke Grader, executive director of the Pacific Coast Federation of Fishermen's Association. "As they realize it's in their best interest to protect critters and habitat, then we'll have a clamor for solutions."

No matter how much ground the interest groups and top-level agency officials manage to cover in their quest for a compromise-based solution to both short- and long-term Bay-Delta issues, an ultimate decision still will have to be made. "At some point," Warmerdam said, "someone at the executive level is going to have to bite the bullet."

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